

populations of plants and animals that are more typical of the Piedmont or Mountains, such as three-lined salamanders (*Eurycea guttolineata*), Galax (*Galax urceolata*), and sugar maple (*Acer saccharum*), all of which have been recorded at Greenbank Bluffs located at the extreme northern end of Brunswick County.

Micro-climatic influence is also quite evident along the sea-shore, where the influence of on-shore breezes, carrying salt spray, sand, and shell particles, create a clear zonation of communities. Stands of Maritime Evergreen Forest occur only in protected areas behind dunes; there is typically a strong krumholz effect wherever the tops of the trees or shrubs extend beyond that protection. On the seaward side of the dunes, grasslands and other herb-dominated communities prevail, particularly in areas that are periodically over-washed during storms.

Despite the climatic and micro-climatic uniformity that prevails over the project area, the natural communities form a distinctive fine-grained mosaic, with pocosins interspersed with savannas, interspersed with flatwoods, interspersed with sandhills. This community mosaic -- which is better developed here than anywhere else in the North Carolina Coastal Plain -- results partly from the presence of numerous small depressions, flats, and sandhills that were created during the Ice Age, as discussed previously. Although differing only slightly in elevation, these features vary greatly in terms of drainage, which has major implications for vegetation, given the high amount of precipitation the area receives.

Also of great importance in producing this habitat mosaic are fires, which are ignited naturally as the result of thunderstorms. Coastal North Carolina experiences thunderstorms an average of 45 days per year, primarily in the summer. Even though this number is not significantly higher than occurs over most of the state (Kopec and Clay, 1975), the flat terrain and well-drained sandy soils of the Coastal Plain are particularly conducive for the spread of wildfires; before the landscape was broken up by cultivated fields, roads, and other firebreaks, fires could spread unchecked for tens of miles from a single point of ignition.

In areas of the Coastal Plain that still experience frequent fire (now often the result of prescribed burning), even slight differences in drainage and soil moisture determine how intense the fire will be and how the vegetation will be affected by the burn. Flatwoods and savannas, occupying slightly drier sites, tend to burn the most readily, and are maintained in their open state as a result. Just a few feet away, low basins that have accumulated peat may be too waterlogged to ignite from a low intensity fire that has just swept through the neighboring longleaf community. Even so, occasional, very intense fires may ignite peatland communities, and are responsible for maintaining some of the features of these habitats. Pond pines, for instance, require fire to set seed, just as wiregrass does in longleaf habitats.

Fire is also important in shaping the composition and structure of tidewater marshes, but an even more important force of disturbance along the immediate coast are coastal storms: hurricanes cross the area every few years and severe winter storms -- particularly nor'easters -- occur regularly each year. These major storms play a dramatic role in shaping the topography of